

# SERVICE MANUAL

## PERFORMANCE SIGNAL PROCESSOR

# A2

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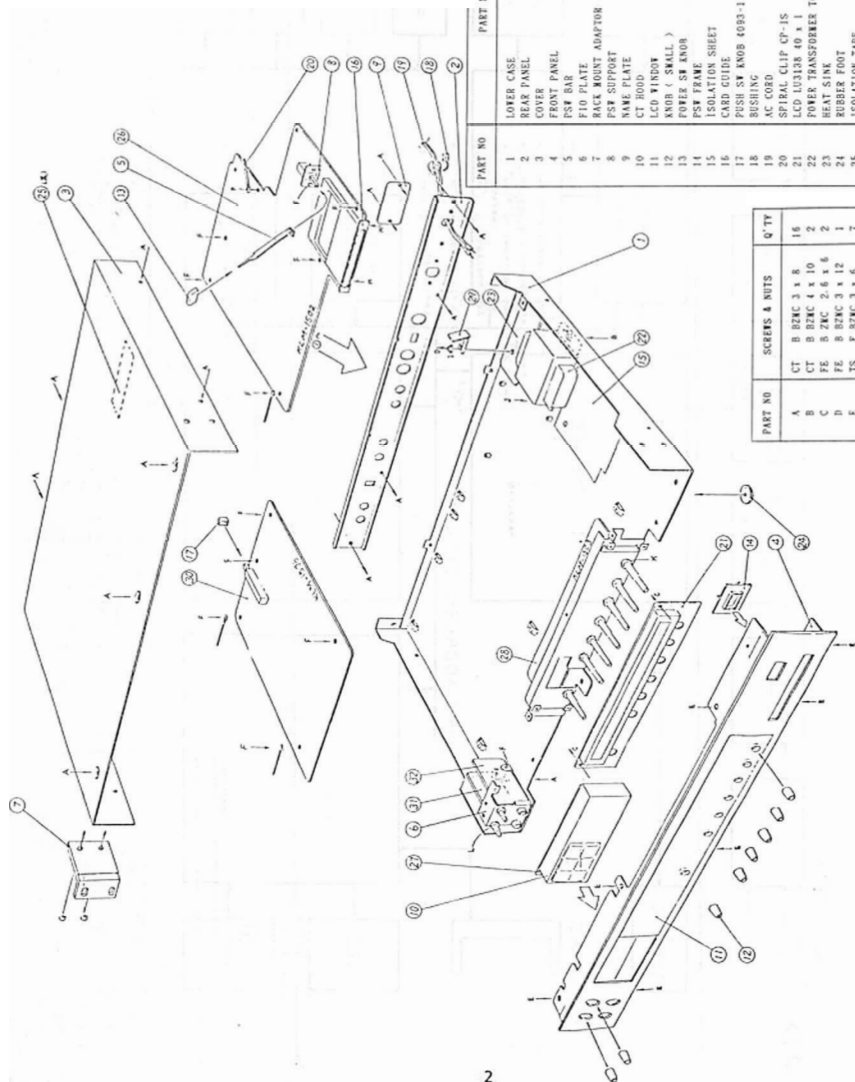
# KORG

# 1. SPECIFICATION

- Front panel input : FRONT (GUITAR IN) fixed at - 20dB ( - 5dBm MAX)/1M  $\Omega$
- Back panel input : Input level/impedance : +4dB (+19dBm MAX)/50K  $\Omega$  - 10dB (+5dBm MAX)/50K  $\Omega$
- Back panel output : Output level/impedance : +4dB (19dBm MAX)/470  $\Omega$  - 10dB (+5dBm MAX)/470  $\Omega$   
Headphone out impedance: over 10  $\Omega$
- AD/DA : 16 - bit linear (DA: 4 - times over - sampling digital filter)
- Sampling frequency : 37.1KHz
- Frequency response : 24Hz - 18KHz + 1.5/ - 3dB
- Dynamic range : 90dB
- Memory : No.1 - 100; No.1 - 200 when using card
- Front panel :  
KEY SW : UP,DOWN,DISPLAY SELECT,PARAMETER EDIT,UTILITY,WRITE,POWER SW, DOUBLE FUNCTION EDITOR [A - F, CHAIN/EFFECT(BYPASS)]  
Display : Backlit LCD display: 40 characters  $\times$  1 row  
PROGRAM No. display : 7 - segment LED  $\times$  3  
Dot type LEDs : PERFORMANCE,INDIVIDUAL,BYPASS,PARAMETER EDIT,UTILITY  
Input level : 5 - element level meter, with digital clip  
INPUT VOLUME  
PHONES LEVEL  
CARD slot  
GUITAR IN terminal  
PHONES terminal (stereo)
- Rear panel  
Switches : level attenuation switch ( - 10dB/+4dB), MIDI OUT/THRU toggling switch  
LINE IN terminal  $\times$  2 (L/MONO,R)  
OUT PUT terminal  $\times$  2 (L/MONO,R)  
PEDAL/SW input terminal  $\times$  2  
MIDI IN, MIDI OUT/THRU  
REMOTE IN
- Internal effects: REVERB GROUP, COMPRESSOR GROUP, DISTORTION GROUP, DELAY GROUP,STEREO DELAY GROUP, MODULATION DELAY GROUP, MODULATION GROUP, ROTARY SPEAKER GROUP, PAN GROUP, PARAMETRIC EQUALIZER, PITCH SHIFTER GROUP, EXCITER GROUP, ENSEMBLE GROUP, PHASER GROUP, 3 BAND EQUALIZER, SPEAKER SIMULATION GROUP, PEDAL PAN, GATE,PEDAL WAH, EARLY REFLECTION, HARD DISTORTION GROUP, AUTO WAH GROUP, SPACE PHASER GROUP, MULTI TAP DELAY GROUP, LONG DELAY GROUP,TEMPO DELAY, DYNAMIC MODULATION GROUP, 4CH MIXER, GATE II GROUP, LIMITTER, BAND CHORUS GROUP, STEREO EXCITER, COMP/LIMITTER, SUPER DISTORTION GROUP, HARD DISTORTION II GROUP, NEW 3 BAND EQUALIZER, MULTI - TAP CHORUS, REVERB II GROUP,DRIVER, ROTARY SPEAKER II, MODULATION II GROUP, STEREO COMP/LIMITTER LEFT, STEREO COMP/LIMITTER RIGHT,STEREO PITCH SHIFTER/DELAY GROUP, SPECIAL REVERB GROUP,  
Power consumption: 26 W
- Dimensions: 482(W)  $\times$  332.5(D)  $\times$  44(H)mm (19"  $\times$  12 - 15/16"  $\times$  1 - 3/4")
- Weight : 4.5 kg (albs 14 1/2oz)
- Optional accessories: VOLUME PEDAL(KVP - 001), FOOT SWITCH(PS - 1,PS - 2), REMOTE CABLE(RCC - 050,RCC - 100), FOOT CONTROLLER(FC6), RAM CARD(MCR - 03 only), ROM CARD(SPC - 01 -)

★ Specifications are subject to change without notice

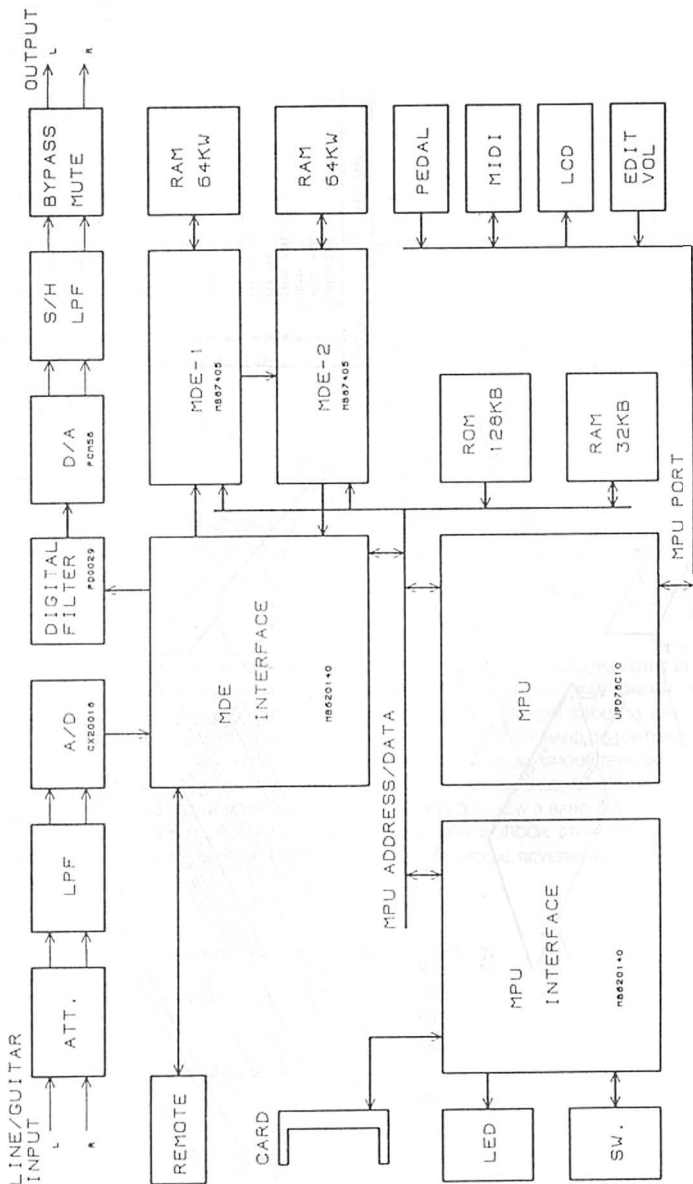
## 2. STRUCTURAL DIAGRAM



PART NO	PART NAME	PART CODE
1	LOWER CASE	64008500
2	REAR PANEL	641018500
3	FRONT PANEL	64008500
4	PFT BAR	641018500
5	PFT SUPPORT	64008500
6	RACK MOUNT ADAPTOR	64102800
7	NAME PLATE	64008500
8	LCD WINDOW	64008500
9	HANDLE (SWALL)	64008500
10	PFT FRAME	64008500
11	ISOLATION SHEET	64008500
12	CARD GUIDE	64008500
13	BUSHING	64008500
14	AC CORD	64008500
15	SPIRAL CLIP CP-18	64008500
16	HEAT SINK	64008500
17	RUBBER FOOT	64008500
18	ISOLATION TAPE	64008500
19	P.C. BOARD KLM-1502 (MAIN BOARD)	001150200
20	P.C. BOARD KLM-1504 (PANEL BOARD)	001150200
21	P.C. BOARD KLM-1505 (TR BOARD)	001150200
22	P.C. BOARD KLM-1506 (REGULATOR BOARD)	001150200
23	P.C. BOARD KLM-1507 (ANALOG BOARD)	001150200
24	P.C. BOARD KLM-1508 (HEADPHONE BOARD)	001150200

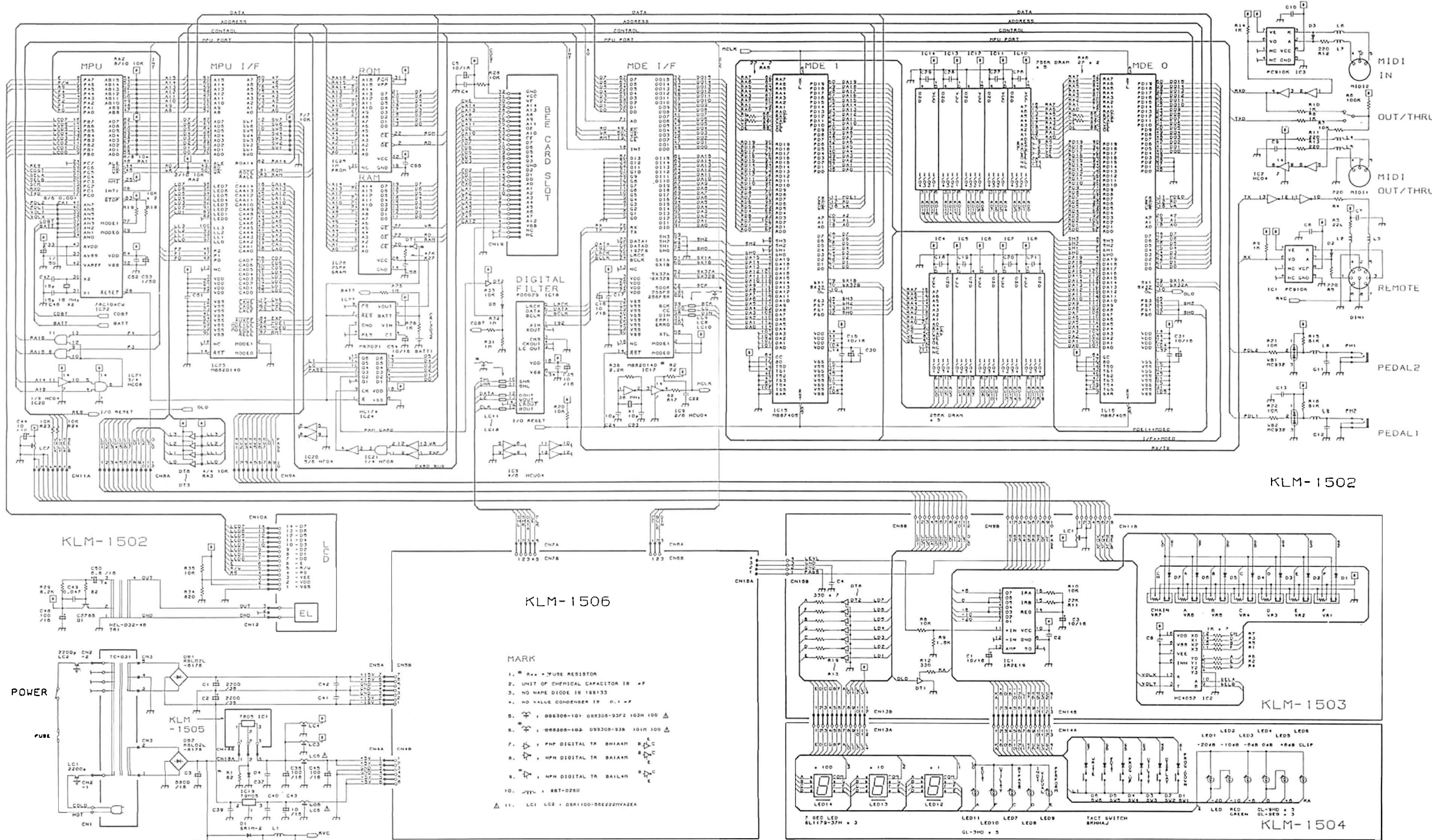
PART NO	SCREWS & NUTS	QTY
A	CT B BZNC 3 x 8	16
B	CT B BZNC 3 x 10	16
C	FE B BZNC 2.5 x 6	2
D	FE B BZNC 3 x 12	1
E	TS B BZNC 3 x 6	7
F	CT B BZNC 3 x 6	15
G	TP26 B BZNC 4 x 10	4
H	PLAK B BZNC 3 x 10	4
I	FIN BZNC 3	1
J	FIN BZNC 4	2
K	FIN BZNC 5	2
L	FIN BZNC 7	2

### 3. BLOCK DIAGRAM



4. CIRCUIT DIAGRAM

KLM-1502-05



# KLM-1506-08

## MARK

1. NO NAME DIODE IS 1SB133
2. NO VALUE CONDENSER IS 0.1  $\mu$ F
3. UNIT OF CHEMICAL CONDENSER IS  $\mu$ F
4. : 555-305 103
5. : NPN DIGITAL TR
6. : 8L02R2+R52

## KLM-1502

GUITAR IN

## KLM-1507

## KLM-1508

PHONES

## KLM-1503

## A/D

## D/A

## LEVEL

L/MONO

INPUT

R

L/MONO

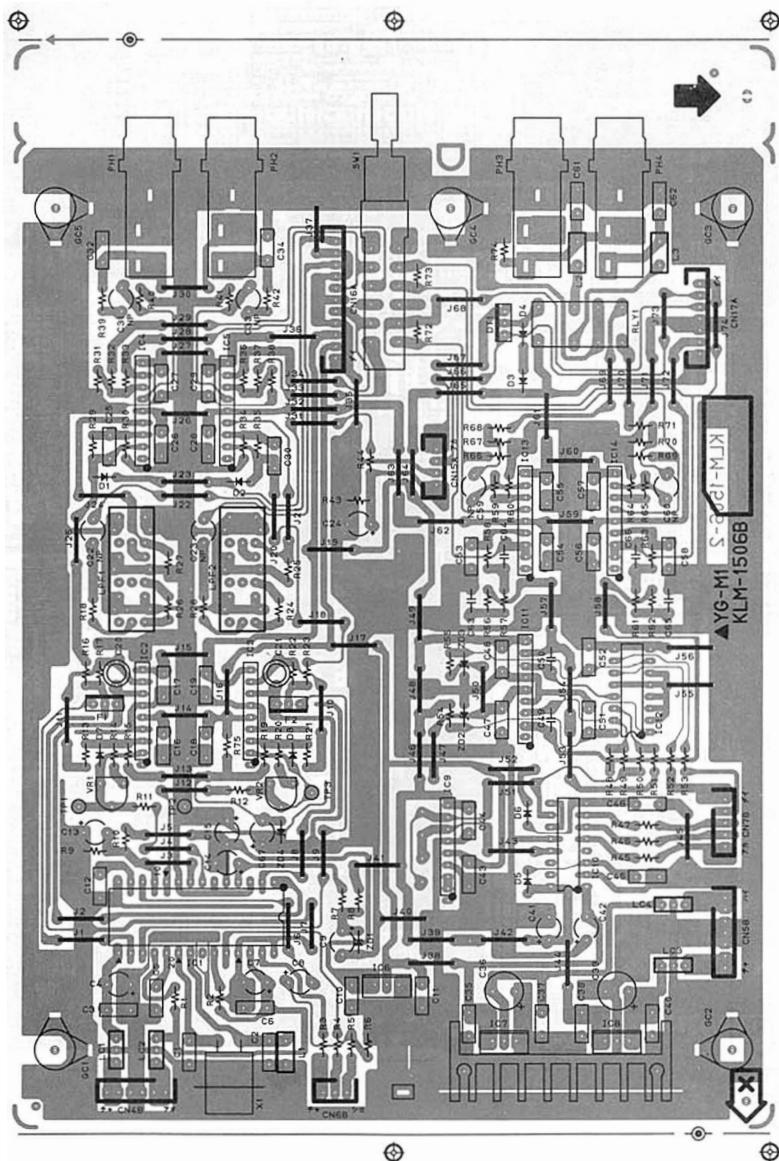
OUTPUT

R

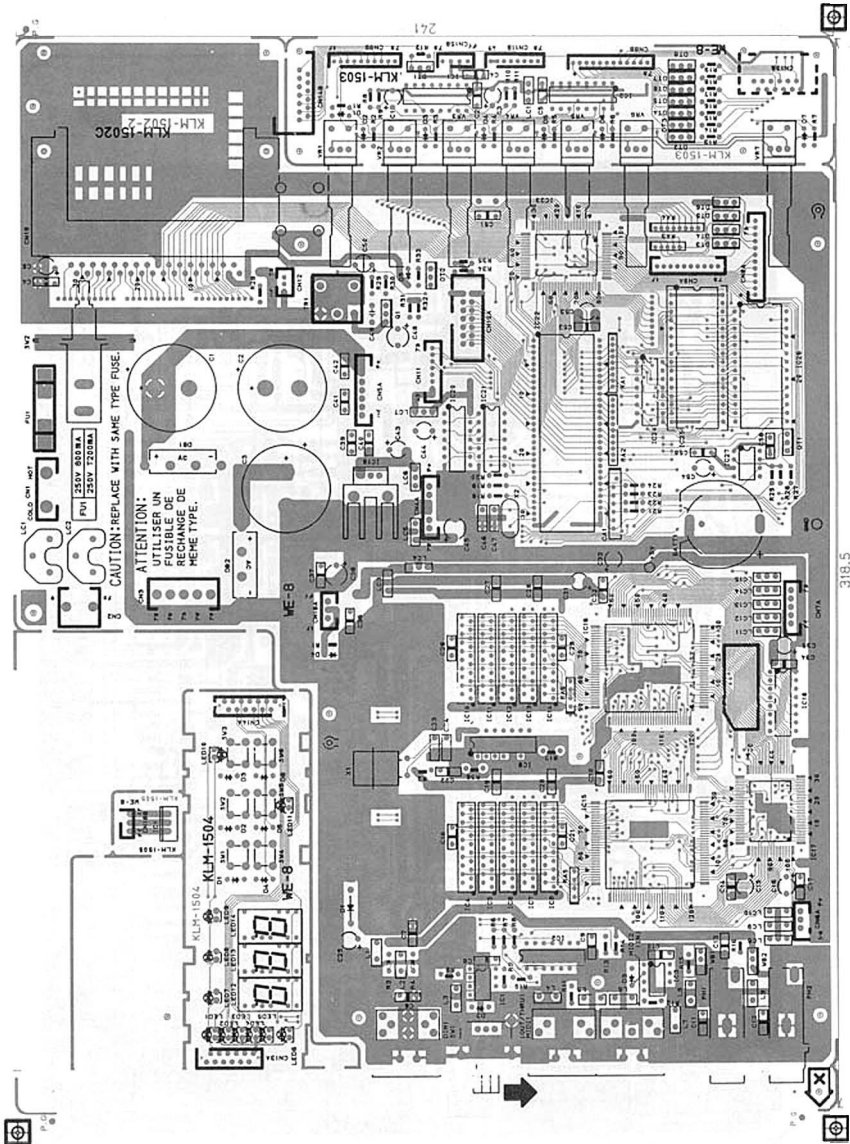
## KLM-1505

## 5. P.C. BOARDS

KLM-1506B



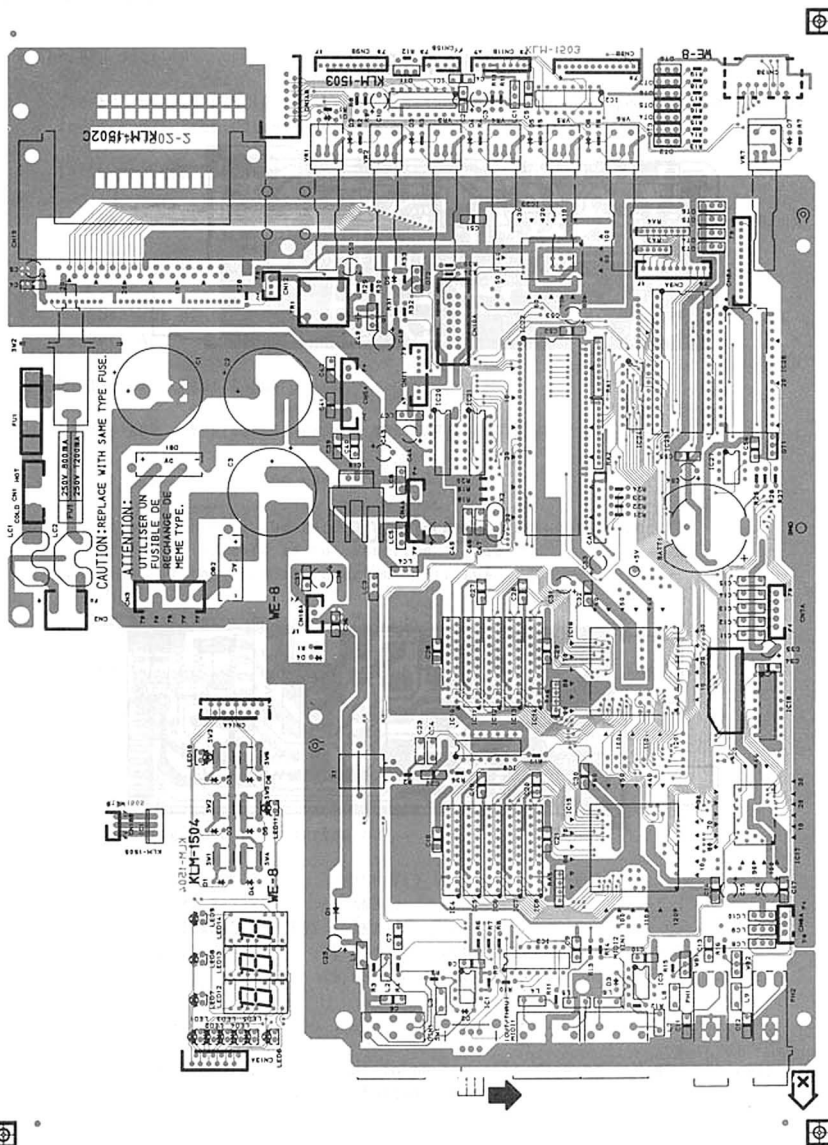
KLM-1502-05



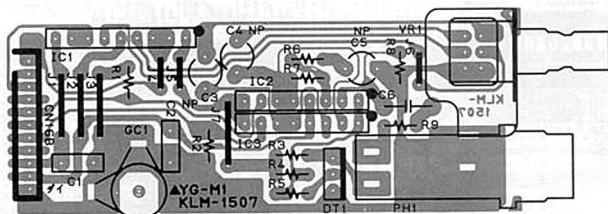
318.5

MOUNT PARTS SIDE

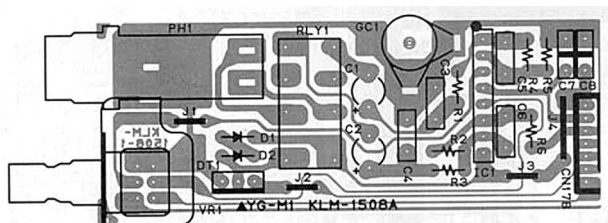




# KLM-1507



# KLM-1508



## 6. CIRCUIT EXPLANATION

### 1. The MPU section

The MPU uses UPD78C10 and processes the following. The port of the MPU are indicated in the parentheses.

#### 1) The control of the LCD unit ( PA5-7, PB0-7 )

The LCD are controlled by using a part of the Port A and the Port B.

#### 2) The bank change of the memory area ( PA3, 4 )

The bank of the memory and the I/O is changed by using a part of the Port A.

#### 3) The I/O reset ( PC6 )

The MDE ( MB87405 ) and the MDE I/F ( MB620140 ) are reset.

#### 4) The detection of the card ( CDST )

The existence of the card are detected by using this port

If the card is not inserted : HIGH

If the card is inserted : LOW

#### 5) The multiplexer control ( PC3, 4 )

The multiplexer HC4052 ( IC2 ) are controlled in the KLM-1503.

#### 6) MIDI I/O ( PC0, 1 )

#### 7) A/D

The A/D convertor in the MPU are used and the A/D conversion of the following data are carried out.

PEDAL/SW 1-2	( AN6, 7 )
CARD BATTERY	( AN3 )
INTERNAL BATTERY	( AN2 )
EDIT VR	( AN4 ).....CHAIN/EFFECT. B, D, F VR
	( AN5 ).....A, C, E VR

### 2. The MPU I/F section

The MPU I/F MB620140 is the LSI to be the interface of the MPU and each I/O and the main functions are as follows.

#### 1) Address Latch ( AD0-7 )

This IC latches the lower 8 bit of the address bus of the MPU with the timing of the ALE terminal.

2) LED Control ( LL0-3, LED1-7 )

This IC receives the data from the MPU and puts the LED on.

3) Bank Change Input ( P0-2 )

This IC receives the bank change signal and controls the ROA 14 and each CE output.

4) SW Data Input ( SW1-7 )

This IC is the input port to transmit the SW data to the MPU.

5) Address Output ( A0-7 )

This IC transmits the latched time-division address bus.

6) CARD I/O ( CAA, CAD )

The address bus for the card and the data bus for the card.

7) CE Output

Each memory, the CE output terminal for the I/O.

3. The MDE I/F section

The MDE I/F MB620140 is the LSI to be the interface between the A/D convertor and the D/A convertor. This also transmits and receives the remote signal for the FC6.

1) The interface with the A/D convertor ( BCK, CC, DIN )

This IC converts the serial data of CX-20018 into the parallel data and transmits to the MDE0. The CC terminal transmits 37.1 KHz and the BCK transmits 1.188 MHz.

2) The interface with the D/A convertor ( DATA0, 192FS, LRCK, BCLK )

This IC converts the parallel data from the MDE to the serial data and transmits to the digital filter PD0028.

3) The remote I/O ( RX, TX )

When the data is received from the I/O terminal for the FC6, this IC transmits the interruption signal to the MPU.

## 7. CHECK AND ADJUSTMENT

Before you start the diagnostic test

If necessary data are memorized in the A2, please save the data into the RAM card before starting the test.

Starting the diagnostic test

Connect the MIDI cable to the MIDI IN and OUT of the rear panel.  
Insert a RAM card ( MCR-03 ) into the card slot.

When the power is turned on while " CHAIN/EFFECT " and " C " are being pressed, this diagnostic test ( Self Test Program ) starts.

The explanation of the operation switches on the diagnostic test

- " WRITE " switch : The check proceeds to the next.
- " ▲ " switch : The item proceeds to the next.
- " ▼ " switch : The item returns to the previous one.
- BYPASS " switch : The diagnostic test mode returns to the normal mode.

Regarding the " PARAMETER INITIALIZE "

When the diagnostic test starts normally, the screen of the " PARAMETER INITIALIZE " is indicated.

PARAMETER INITIALIZE ? YES / NO

Press " YES " ( E ) if you would like to initialize the internal data of the A2 or press " NO " ( F ) if you don't want to do that.

### 1. INTERNAL CHECK

When the PARAMETER INITIALIZE is finished, the item proceeds to the INTERNAL CHECK automatically.

#### 1) MIDI circuit check

The MIDI IN-OUT is checked.

When this check passes, the item proceeds to the next automatically.

When this check fails, all the LEDs go on and off and the letter " Err " is indicated in the LED display.

Then the following is indicated in the LCD.

< MIDI > OUT--X-->IN

## 2) Remote circuit check

The remote terminal circuit is checked.

When this check passes, the item proceeds to the next automatically.

When this check fails, all the LEDs go on and off and the letter " Err " is indicated in the LED display.

Then the following is indicated in the LCD.

( REMOTE ) OUT--X-->IN

- ※ You need a short plug ( DIN plug whose 1 pin and 4 pin, 3 pin and 5 pin are short-circuits ). If the short plug is not available, press the " WRITE " SW and proceed to the next check.

## 3) Card battery check

The battery of the RAM card into the card slot is checked.

When this check passes, the item proceeds to the next automatically.

When this check fails, all the LEDs go on and off and the letter " Err " is indicated in the LED display.

Then, when no RAM card is inserted into the card slot or a ROM card is inserted into it, the following is indicated in the LCD.

( CARD ) WRITE / READ xx

When the battery voltage of the RAM card is low, the following is indicated in the LCD.

( CARD ) CARD Battery Low xx

## 4) Internal battery check

The battery voltage of the A2 is checked.

When this check passes, the item proceeds to the next automatically.

When this check fails, all the LEDs go on and off and the letter " Err " is indicated in the LED display.

Then the following is indicated in the LCD.

( INT BATT ) Internal Battery Low xx

## 2. A/D LEVEL CONFIRMATION AND ADJUSTMENT

When the INTERNAL CHECK is finished, the item proceeds to the A/D LEVEL CONFIRMATION AND ADJUSTMENT automatically.

### 1) L ch A/D level confirmation and adjustment

〈 A/D LEVEL 〉 Lch Checking ..

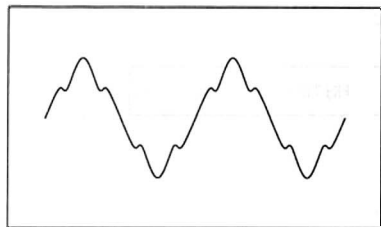
- (1) Input the sin wave of 1Vp-p 400Hz to the LINE IN L/MONO terminal of the rear panel.
- (2) Connect an oscilloscope to the OUTPUT L/MONO terminal of the rear panel and adjust the output waveform to 40mVp-p with the master VR of the front panel.
- (3) Confirm the output waveform transforms the normal sin wave.  
If it is not so, adjust with the VR1 of KLM-1506.

When this check is finished, press the "WRITE" SW to proceed to the next check.

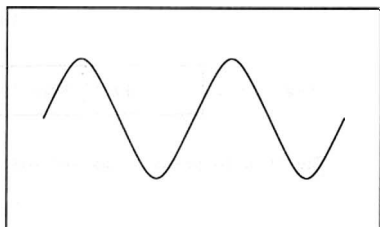
### 2) R ch A/D level confirmation and adjustment

〈 A/D LEVEL 〉 Rch Checking ..

- (1) Connect an oscilloscope to the OUTPUT R terminal of the rear panel and adjust the output waveform to 40mVp-p with the master VR of the front panel.
- (2) Confirm the output waveform transforms the normal sin wave.  
If it is not so, adjust with the VR2 of KLM-1506.



NG



GOOD

※ If this adjustment is not its proper position, the noise will be much bigger.

### 3. LED, LCD, SW, D.F.E., AND PEDAL CHECKS

#### 1) LED check

The LEDs of the front panel light automatically on this check

( LED ) Checking ..

The turn to light is as follows.

"UTILITY" → "PRAM EDIT" → "PERFORM" → "INDIVID" → "BYPASS" → 7 SEGMENT LED

Confirm all the LEDs light.

When all the LEDs go out, the item proceeds to the next check automatically.

#### 2) LCD check

When the "WRITE" SW is pressed once, all the dots of the LCD are indicated.

Confirm this.

( LCD )

1



When this check is finished, press the "WRITE" SW to proceed to the next check.

#### 3) Panel SW check

Press the switch indicated in the LCD to check it

(eg.)

( PANEL SW ) Push [ WRITE ]

The turn to press is as follows.

"WRITE" → "PARAM EDIT" → "▲" → "UTILITY" → "DISPLAY SELECT" → "▼"

When this check is finished, the item proceeds to the next check automatically.



#### 4) D.F.E. check

When the D.F.E. which is indicated in the LCD is pressed once, the name of the D.F.E. which is being pressed and the A/D value are indicated in the LCD.

Also, confirm the A/D value changes between 0 and 255 when this D.F.E. is turned.

(eg.)

[ D.F.E. ] Push [ A ] BYPASS 252				
	↑	↑	↑	
	next SW	push SW	A/D	

When this check is finished, press the "WRITE" SW to proceed to the next check.

#### 5) Pedal check

Connect the volume pedal KVP-001 to the PEDAL/SW 1 and 2 terminal of the rear panel. Set the slide VR of the KVP-001 to be 0.

##### (1) Pedal 1 check

Confirm the A/D value changes between 0 and 255, the MIDI data changes between 0 and 127 when the KVP-001 is operated at the condition that the letter "PEDAL 1" is indicated in the LCD.

(e.g.)

[ PEDAL ] PEDAL 1 : 208 127				
		↑	↑	
		A/D	MIDI DATA	

When this check is finished, press the "WRITE" SW to proceed to the next check.

##### (2) Pedal 2 check

Check as well as (1)

When this check is finished, press the "WRITE" SW to proceed to the next check.

#### 4. MDE CHECK

Connect an oscilloscope to the OUTPUT L/MONO terminal of the rear panel.

##### 1) MDE 1 ( IC15 ) check

( MDE ) MDE1 Checking ..

The waveform which is oscillated only from the MDE 1 ( IC15 ) internally is transmitted.

Confirm that the following waveform can be monitored on the oscilloscope.

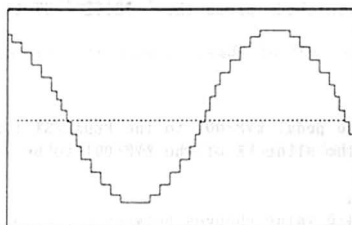


Fig. 1 MDE Test Waveform

When this check is finished, press the "WRITE" SW to proceed to the next check.

##### 2) MDE 2 ( IC16 ) check

( MDE ) MDE2 Checking ..

Check as well as 2)

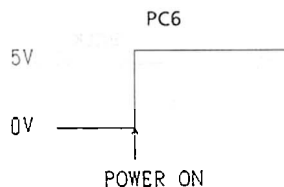
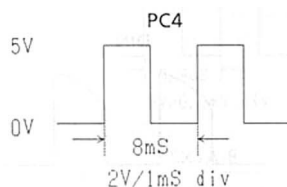
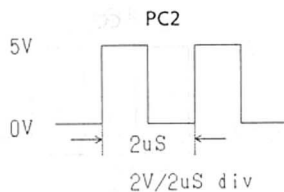
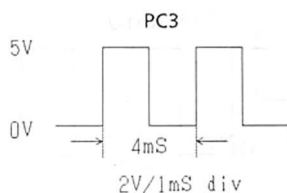
When this check is finished, press the D.F.E. "BYPASS" SW to return to the normal mode.

#### ※ Regarding the check item of the diagnostic test

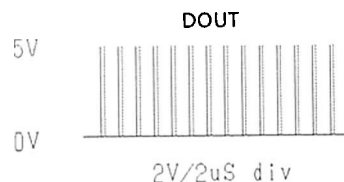
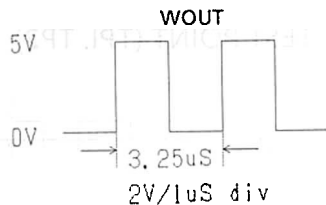
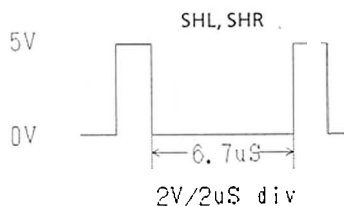
We don't mention anything about the checks after the MDE check because they are for the inspection at the factory and because an audio analyzer etc. are needed.

## 8. IC CHECK POINT

### UPD78C10CW (MPU)

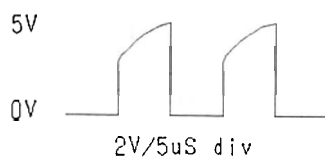
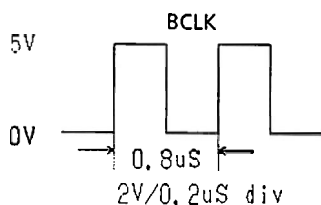
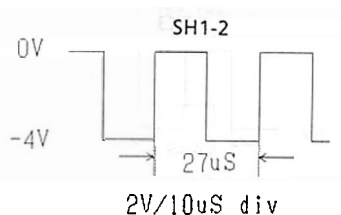
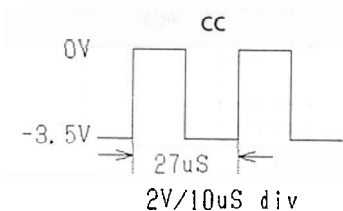


### PD0029 (D. FILTER)



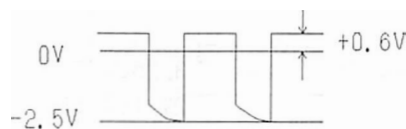
When a sound is received,  
the pulse changes.

## CX20018 (ADC)



When a sound is received,  
the pulse changes.

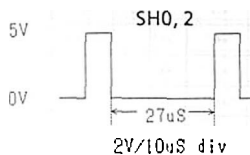
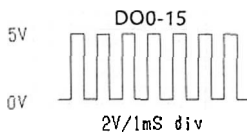
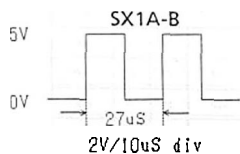
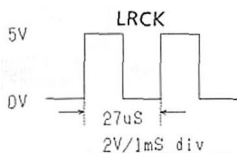
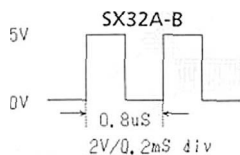
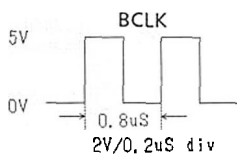
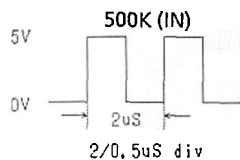
## TEST POINT (TPI. TP2)



When the level of this waveform has the large difference,  
the noise is generated.

In this case, please adjust with the VR 1 and 2.

## MB620140 (MDE I/F)

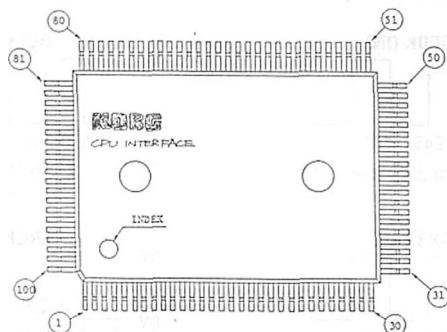


When the internal noise gate works,  
the data is fixed.

## 9. REFERENCE DATA

### MB620140 (CPU-INTERFACE)

#### PIN ASSIGNMENT



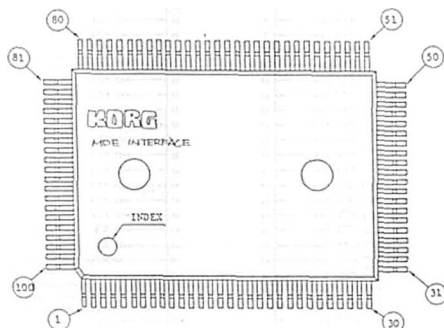
### MB620140 (CPU-INTERFACE)

#### PIN FUNCTION

NO.	I/O	PIN NAME	NO.	I/O	PIN NAME	NO.	I/O	PIN NAME	NO.	I/O	PIN NAME
1	I	MODE0	26	I/O	CAD7	51	I	ALE	76	O	A5
2	I	MODE1	27	I/O	CAD6	52	I	A8	77	O	A6
3	-	VDD	28	-	VDD	53	-	UCD	78	-	VDD
4	-	VSS	29	-	VSS	54	-	VSS	79	-	VSS
5	I	SW0	30	I/O	CAD5	55	I	A9	80	O	A7
6	I	SW1	31	I/O	CAD4	56	I	A10	81	O	RDCE
7	I	SW2	32	I/O	CAD3	57	I	A11	82	O	RDQ14
8	I	SW3	33	I/O	CAD2	58	I	A12	83	O	RDCE
9	I	SW4	34	I/O	CAD1	59	I	A13	84	O	AUXCE
10	I	SW5	35	I/O	CAD0	60	I	A14	85	O	MODECE
11	I	SW6	36	O	CAW0	61	I	A15	86	O	MODEICE
12	I	SW7	37	O	CAW1	62	I/O	AD7	87	O	RECE
13	-	NC	38	O	CAW2	63	I/O	AD6	88	O	LED0
14	I	RST	39	O	CAW3	64	I/O	AD5	89	O	LED1
15	-	VSS	40	-	VSS	65	-	VSS	90	-	VSS
16	-	NC	41	O	CAW4	66	I/O	AD4	91	O	LED2
17	O	CAWE	42	O	CAW5	67	I/O	AD3	92	O	LED3
18	O	CAW14	43	O	CAW6	68	I/O	AD2	93	O	LED4
19	O	CAW13	44	O	CAW7	69	I/O	AD1	94	O	LED5
20	O	CAW8	45	O	CAW12	70	I/O	AD0	95	O	LED6
21	O	CAW9	46	I	P2	71	O	AD	96	O	LED7
22	O	CAW11	47	I	P1	72	O	AD	97	O	LL0
23	O	CAWE	48	I	P0	73	O	AD	98	O	LL1
24	O	CAW10	49	I	RD	74	O	AD	99	O	LL2
25	O	CAWE	50	I	WR	75	O	AD	100	O	LL3

# MB620140 (MDE INTERFACE)

## PIN ASSIGNMENT



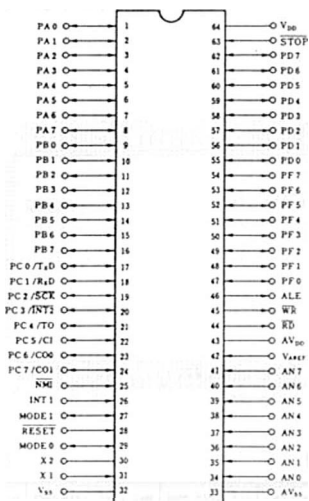
# MB620140 (MDE INTERFACE)

## PIN FUNCTION

NO.	I/O	PIN NAME	NO.	I/O	PIN NAME	NO.	I/O	PIN NAME	NO.	I/O	PIN NAME
1	I	MODE0	26	O	LACK	51	I	SK14	76	I	RX
2	I	MODE1	27	O	192FS	52	I	SK32H	77	O	TX
3	-	VDD	28	-	VDD	53	-	VDD	78	-	VDD
4	-	VSS	29	-	VSS	54	-	VSS	79	-	VSS
5	I	G0	30	O	ERR0	55	I	G12	80	O	256FSX
6	I	G1	31	O	ERR1	56	I	XTL	81	I	D115
7	I	G2	32	O	D015	57	I	G13	82	I	D114
8	I	G3	33	O	D014	58	I	SH1	83	I	D113
9	I	G4	34	O	D013	59	I	SH3	84	I	D112
10	I	G5	35	O	D012	60	I	SK18	85	I	D111
11	I	G6	36	O	D011	61	I	SK32B	86	I	D110
12	I	G7	37	O	D010	62	I/O	D7	87	I	D19
13	-	NC	38	O	D09	63	I/O	D6	88	I	D18
14	I	RST	39	O	D08	64	I/O	D5	89	I	D17
15	-	VSS	40	-	VSS	65	-	VSS	90	-	VSS
16	-	NC	41	O	D07	66	I/O	D4	91	I	D16
17	I	G8	42	O	D06	67	I/O	D3	92	I	D15
18	O	INT	43	O	D05	68	I/O	D2	93	I	D14
19	I	CE	44	O	D04	69	I/O	D1	94	I	D13
20	I	G9	45	O	D03	70	I/O	D0	95	I	D12
21	I	G10	46	O	D02	71	I	SH0	96	I	D11
22	I	G11	47	O	D01	72	O	500F	97	I	D10
23	O	OUT4	48	O	D00	73	O	256FS	98	I	D10
24	O	BCLK	49	I	RD	74	I	SH2	99	O	BCK
25	O	DAT00	50	I	WR	75	I	SH0	100	O	CC

# MPU (UPD78C10ACW)

## PIN ASSIGNMENT



# MPU (UPD78C10ACW)

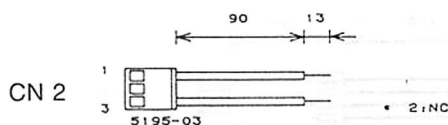
## PIN FUNCTION

PIN NAME	I/O	FUNCTION
PA7-0	I/O	Port A
PB7-0	I/O	Port B
PC0	O	Transmit Data
PC1	I	Receive Data
PC2	O	Serial Clock
PC3	I	Interrupt Request
PC4	O	Timer Output
PC5	I	Counter Input
PC6, 7	O	Counter Outout 0.1
AD7-0	I/O	Address/Data Bus
AB15-8	O	Address Bus
WR	O	Write Strobe
RD	O	Read Strobe
ALE	O	Address Latch Enable
MODE0, 1	I/O	Mode

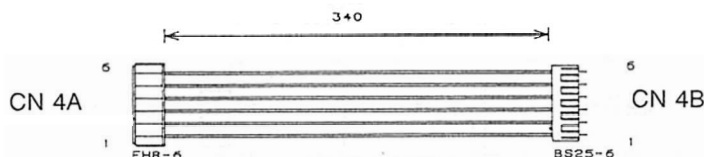
PIN NAME	I/O	FUNCTION
NMI	I	Non-Maskable Interrupt
INT1	I	Interrupt Request
AN7-0	I	Analog Input
VAREF	-	Reference Voltage
AVDD	-	Analog VDD
AVSS	-	Analog VSS
X1, X2	-	Crystal
RESET	I	Reset
STOP	I	Stop
VDD	-	VDD
VSS	-	VSS



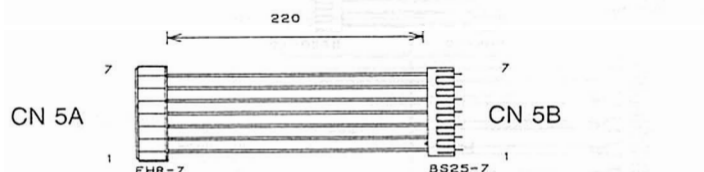
## FOR HARNESSES



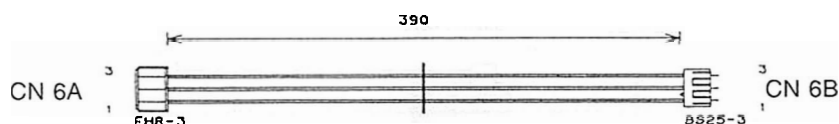
HNS-1556



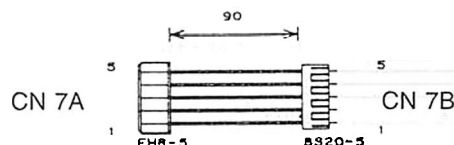
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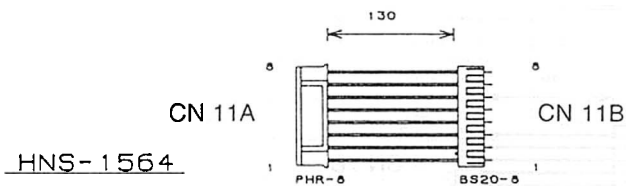
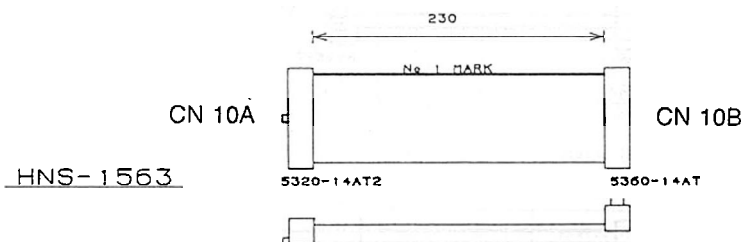
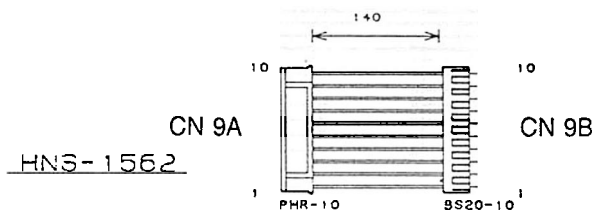
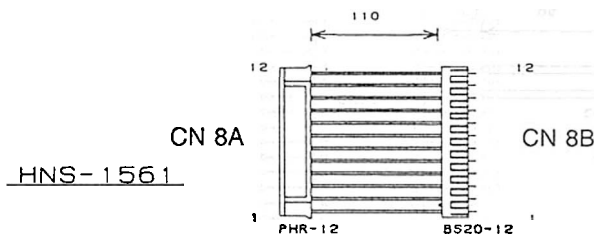
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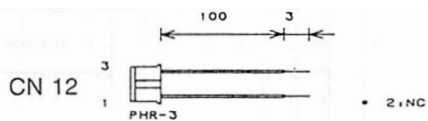


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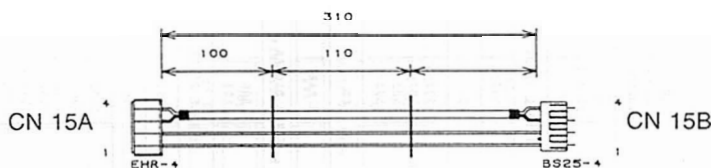


HNS-1560

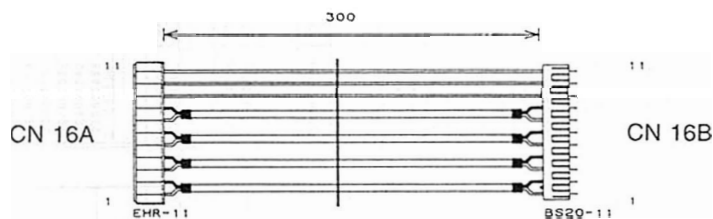




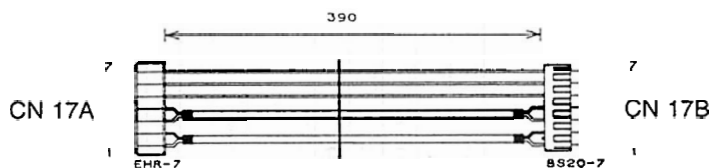
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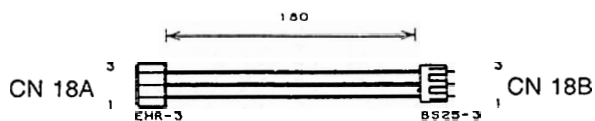
HNS-1566



HNS-1567



HNS-1568



HNS-1569

# 10. PARTS LIST

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
<b>P. C. BOARD ASSEMBLY</b>				
001150200	ELW-1502-05	1502-5		1
001150600	ELW-1506	1506		1
001150700	ELW-1507/08	1507/8		1
<b>BLOCK RESISTORS</b>				
139010001	RGLD2Y220J 220HM	1502-5		2
139010002	RGLE10x103J 10K	1502-5		1
139010003	RGLE4x103J 10K	1502-5		1
139010004	RGLE7x103J 10K	1502-5		1
139010005	RGLE8x103J 10K	1502-5		1
<b>LC FILTER</b>				
219051300	S132420	1506		2
<b>AC LINE FILTER</b>				
219051500	DSR1100-56E222MVA2	1502-5		2
<b>EMI FILTERS</b>				
219401000	DSS306-93F2103N100	1502-5		6
		1506		4
219401100	DSS306-93B101M100	1502-5		8
<b>BLOCK CAPACITOR</b>				
248025410	50V 100PF x 6	1502-5		1
<b>PPCs</b>				
260002547	100V 0.047UF	1507-8		1
260003368	100V 680PF	1506		2
<b>TRANSISTORS</b>				
304020070	2SC2785	1502-5		1
304020100	BA1A4W-T	1502-5		7
		1506		1
		1507/8		1
304020110	BN1A4W-T	1502-5		6
304020220	BA1L4W-T	1502-5		1

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
<b>FET</b>				
306000600	2SK-152-3	1506		2
<b>DIODES</b>				
310002100	SR1W-2	1502-5		1
314001300	1SS-133	1502-5		17
		1506		8
<b>BRIDGE DIODE</b>				
310011000	KBL02L-6176	1502-5		2
<b>LEDs</b>				
312007800	GL3HD8	1502-5		5
312008200	SL-1179-37H (RED)	1502-5		3
312008700	GL-9HD22	1502-5		3
312008800	GL-9EC22	1502-5		3
<b>LCD</b>				
313001700	LU3138 40 x 1	N. PART		1
<b>ZENER DIODES</b>				
314024300	HZS-6B1L-TD	1506		2
314024400	RD6.2ESB1-T1	1506		2
<b>DOUBLE DIODE</b>				
315000400	MC932-T12	1502-5		2
<b>ICs</b>				
320001068	UPD74HC04C	1502-5		1
320001095	UPD74HC174C	1502-5		1
320001097	UPD74HC04C	1502-5		2
320001101	UPD74HC08C	1502-5		1
320001128	UPD43256C-15L	1502-5	SRAM	1
320001151	UPD74HC4053	1506		1
320001193	UPD78C10ACW	1502-5	CPU	1
320001269	UPD74HC4052C	1502-5		
320009057	NJM7805FA	1502-5		

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
320009078	NJ78M12FA	1506		1
320009079	NJ78M12FA	1506		1
320009080	NJ78M05FA	1502-5		1
		1506		1
320009085	NJ2068SD	1506		5
		1507/8		1
320010003	CX20018	1506	A/D CONVERTER	1
320011026	45216L	1507/8		1
320011076	45238L	1506		3
320011113	45M446AL-10	1502-5	DRAM	10
320011128	462021P	1502-5	RESET	1
320011129	45203L	1507/8		2
320012052	4587405PF	1502-5	MODE	2
320012064	45620140PF	1502-5	CPU(or MODE) I/F	2
320012081	45M27C1000-202-G	1502-5	ROM	1
320013034	182E19	1502-5	LED DRIVER	1
320016001	P90029	1502-5	DIGITAL FILTER	1
320036004	PCM56P	1506	D/A CONVERTER	1
PHOTO COUPLER				
330001400	PC-910E	1502-5		2
COIL				
334000200	XTE47MA 0.47UH	1506		1
SB COIL				
334000500	SBT-0260TF	1502-5		9
CRYSTAL OSCILLATORS				
335005700	HC-49/U 60MHz	1506		1
335005800	AT-49 15MHz	1502-5		1
335005900	HC-49/U 38MHz	1502-5		1
SEMI FIXED VR				
350002288	RH0615C 6.8K	1506		2
YES				
382005300	10K x 2	1507/8		2
382005400	10K	1502-5		7

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
SLIDE SW				
373005300	SLS-25-2022-1	1502-5		1
POWER SW				
375007800	ESB-8213V	1502-5		1
TACT SW				
375008500	SKHHAJ	1502-5		6
PUSH SW				
375010200	SPUL1265A	1506		1
POWER TRANSFORMER				
400011700	TC-031	M. PRT		1
FERREITE BEADS				
402002300	BL02EN2-R62	1507/8		2
		1506		2
402002400	NEL-D32-46	1502-5		1
RELAY				
403001500	MR62-12SR	1506		1
DIN JACKS				
454005400	YF51-5008	1502-5		2
454006700	YF51-5014A	1502-5		1
PHONE JACKS				
454007900	YR821-5176	1506		4
454008000	YR821-5138	1502-5		2
		1507/8		2
FUSES				
464011901	250V 0.8A UL	M. PRT	117CN 117US	1 1

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q' TY
464011901	250V 0.8A UL	M. PRT	117EX	1
464061301	250V T200WA	M. PRT	100JP	1
			220GE	1
			240GE	1
			220SE	1
			220SC	1
			220WG	1
			240AU	1
			240UX	1
			220FR	1
			240AF	1
CONNECTORS				
471050500	TOP B5P-VH	1502-5		1
471060300	TOP B3B-EH	1502-5		2
471060400	TOP B4B-EH	1506		1
471060500	TOP B5B-EH	1502-5		1
471060600	TOP B6B-EH	1502-5		1
471060700	TOP B7B-EH	1502-5		1
		1506		1
471061100	B11B-EH	1506		1
471070300	TOP B3B-PH	1502-5		1
471070800	BBB-PH	1502-5		1
471071000	TOP B10B-PH	1502-5		1
471071200	TOP B12B-PH	1502-5		1
471090200	TOP 5096-02C	1502-5		1
BC CONNECTOR				
474009900	L-32	1502-5		1
CARD FIT CONNECTORS				
474012300	ZC-112	1502-5		1
474012400	ZC-113	1502-5		1
SMCD CONNECTORS				
474012500	FC-12 (1.6)	1502-5		1
474012600	FC-13 (1.6)	1502-5		1
LV CONNECTOR				
474012700	B2P-LV-TN	1502-5		1

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q' TY
HEADER				
474014702	14P 5332-14T2	1502-5		1
HARNESSES				
475001556	HNS-1556	M. PRT		1
475001557	HNS-1557	1506	BOARD IN	1
475001558	HNS-1558	1506	BOARD IN	1
475001559	HNS-1559	1506	BOARD IN	1
475001560	HNS-1560	1506	BOARD IN	1
475001561	HNS-1561	1502-5	BOARD IN	1
475001562	HNS-1562	1502-5	BOARD IN	1
475001563	HNS-1563	M. PRT		1
475001564	HNS-1564	1502-5	BOARD IN	1
475001565	HNS-1565	M. PRT		1
475001566	HNS-1566	1502-5	BOARD IN	1
475001567	HNS-1567	1507/8	BOARD IN	1
475001568	HNS-1568	1507/8	BOARD IN	1
475001569	HNS-1569	1502-5	BOARD IN	1
IC SOCKET				
480001324	32P D1CF-32CS-E	1502-5		1
FUSE HOLDER				
515002300	S-N5057 #01	1502-5		2
LITHIC BATTERY				
520001700	CR2032	M. PRT		1
BUSHINGS				
540000300	SR-4K-4	M. PRT	117EX	1
540000400	SR-5P-4	M. PRT	240AU	1
540000500	SR-6W-1	M. PRT	220SE	1
			220FR	1
			220SC	1
			220WG	1
			220GE	1
			240AF	1
			240GE	1
			240UX	1

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q' TY
540000501	SR-6N3-4	M. PRT	117US	1
540016900	SR-5W-3	M. PRT	117CN 100JP	1
TEST PINS				
540007100	LC-2-G YELLOW	1506		2
540011901	LC-2-G	1506		1
SMCD HARNESSSES				
545020310	12x140ESx10	1502-5		1
545020320	12x340ESx10	1502-5		1
HEAT SINKS				
560005500	WSD-25-BS-T	1506		1
560005700	KOC-C40745	M. PRT		1
560006900	MT-25-BS-T	1502-5		1
LED SPACERS				
575014100	L*4.5mm	1502-5		6
575014600	LS-15-4 L*4mm	1502-5		5
AC CORDS				
600000301	CLASS1 (SU429-58)	M. PRT	220WG 240GE 220SC 220GE 240UK 240AU 240AF	1 1 1 1 1 1 1
600000401	SAA (SU428-58)	M. PRT	220SE	1
600000501	BS PLUG (SU431A58)	M. PRT	220FR	1
600000901	SEV (SU430-58)	M. PRT	117CN	1
600001301	KP-4819D	M. PRT	117US	1
600002000	SJT(SU338-56)	M. PRT	117EX	1
600003900	SPT-2	M. PRT	100JP	1
600004100	DP-127-J06	M. PRT		1
POWER SW KNOB				
620018200		M. PRT		1

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q' TY
PUSH SW KNOB				
620020800		M. PRT		1
KNOB				
620020900		M. PRT		9
ISOLATION SHEET				
630007500		M. PRT		1
COPPER SHEET				
630010100		M. PRT	117US 220WG	1 1
LCD WINDOW				
630014200		M. PRT		1
CARD GUIDE				
640088500		M. PRT		1
LOWER CASE				
640096500		M. PRT		1
COVER				
640096600		M. PRT		1
PSW SUPPORT				
640096700		1502-5		1
PSW BAR				
640096800		M. PRT		1
FIO PLATE				
640096900		M. PRT		1

PARTS CODE	PARTS NAME SPECIFICATIONS	P. C. BOARD	IDENTIFICATION NO. FUNCTION	Q'TY
FRONT PANEL				
641018300		M. PRT		1
REAR PANEL				
641018500		M. PRT		1
VR SHIELD				
641019900		1507/8		2
RACK MOUNT ADAPTOR				
641020000		M. PRT		2
SPRING PLATE				
644003000		M. PRT	117US	3
			220VC	3
PSV FRAME				
646030200		M. PRT		1
CT HOOD				
646030500		M. PRT		1
BATTERY HOLDER				
649007400		1502-5		1



## VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.  
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

## ADVARSEL!

Lithiumbatteri – Eksplosionsfare ved fejlagtig handling.  
Udskiftning må kun ske med batteri af samme  
fabrikat og type.  
Levér det brugte batteri tilbage til leverandør.

## ADVERSEL

Lithiumbatteri – Eksplosjonsfare.  
Ved utskifting benyttes kun batteri som  
anbefalt av apparatfabrikanten.  
Brukt batteri returneres apparatleverandør.

## VARNING

Explosionsfara vid felaktigt batteribyte.  
Använd samma batterityp eller en ekvivalent typ som  
rekommenderas av apparattillverkaren.  
Kassera använt batteri enligt fabrikantens instruktion.

## CAUTION

Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type  
recommended by the equipment manufacturer.  
Discard used batteries according to manufacturer's  
instructions.

# KORG

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KORG INC. 15-12, Shimotakaido 1-chome, Suginami-ku, Tokyo 168